Bonneville Power Administration (BPA)
Transmission Services

Available Transfer Capability (ATC) Methodology, Version 3

Posted: February 15, 2007

Effective: February 15, 2007

Table of Contents

Available Transfer Capability (ATC) Methodology,

1 Policy Reference

The ATC methodology set forth in this document is the specific ATC Methodology required by Attachment C of BPA Transmission Services' Open Access Transmission Tariff (Tariff)

2 Definitions

Unless otherwise defined herein, capitalized terms are defined in Tariff, Rate Schedules, ATC Methodology, the Business Practices, and/or Federal Energy Regulatory Commission (FERC) Standards and Communication Protocols for OASIS.

2.1 Available Transfer Capability (ATC): A measure of the transfer capability remaining in the physical transmission network for further commercial activity, over and above already committed uses.

2.2 Flowgate (Cutplane): Transmission lines and facilities owned by BPA on a constrained portion of BPA's internal network transmission grid.

2.3 Operational Transfer Capability (OTC): The amount of power that can be reliably transmitted through a transmission path given current or forecasted system conditions.

2.4 Path: A Point of Receipt (POR)/Point of Delivery (POD) combination.

2.5 Path Utilization Factor (PUF): The fraction of power (often expressed as a percentage) that will flow across monitored Flowgates as that power is injected at a POR and withdrawn at a specified POD. Also referred to as distribution factor or allocation factor.

2.6 Total Transfer Capability (TTC): The amount of electric power that can be transferred over the interconnected transmission network in a reliable manner while meeting all of a specific set of defined pre- and post-contingency system conditions.1 References to TTC shall also mean BPA Transmission Services' share of defined paths.

2.7 ATC Methodology Margin (AMM): The margin accounting for the portion of differences between Contract Accounting and Planning Accounting ATC methodologies to address uncertainties between these two methodologies.

3 Introduction

3.1 BPA owns the Federal Columbia River Transmission System (FCRTS). BPA Transmission Services provides transmission service over the FCRTS under its Tariff and other grandfathered contracts.

[1] Western Electric Coordinating Council, NERC/WECC Planning Standards and Minimum Operating Reliability Criteria, Definitions, Revised December 2004.

3.2 The FCRTS is used to deliver power between resources and loads within the Pacific Northwest, and to transmit power between and among the Pacific Northwest region, western Canada and the Pacific Southwest.

3.3 The FCRTS is comprised of BPA's main grid network facilities (Network), including constrained Flowgates interconnecting with other transmission systems (External Interconnections[2]); Interties;[3] delivery facilities; subgrid facilities, and generation interconnection facilities.

3.4 BPA Transmission Services' Tariff provides that the ATC Methodology will be posted on the OASIS. BPA Transmission Services has developed this methodology, consistent with the National Electric Reliability Council (NERC) and the Western Electric Coordinating Council (WECC) criteria.

3.5 ATC for long-term transmission service on internal Network Flowgates is calculated by measuring the impacts of existing long-term transmission service obligations and new transmission requests on such paths.

3.6 The ATC Methodology combines a planning methodology that measures physical power flows on the Network with a contract accounting methodology that reflects contractual obligation for long-term firm transmission services.

3.7 The ATC Methodology is for long-term transmission service, and is called the Combined Planning/Accounting Methodology.

3.8 The Combined Planning/Accounting Methodology was developed to establish a single method that BPA Transmission Services will use to determine baseline ATC values on constrained Flowgates internal to the Network (Network Flowgates) for such needs as system planning, system operations, and transmission marketing.[4]

3.9 This Network Flowgate approach evaluates transfer capability by monitoring impacts on defined transmission facilities.

3.10 See the Long-Term Network Flowgates ATC Methodology document posted on BPA Transmission Services' ATC Methodology web page for a map and description of BPA's Network Flowgates.

3.11 The Combined Planning/Accounting Methodology will be used for ATC determinations for the Network Flowgates only. The ATC determination for Interties and External Interconnections[5] will continue to use the Contract Accounting Methodology posted on the ATC Methodology page of BPA Transmission Services' web site.

---

[2] Northern Intertie, Reno-Alturas Transmission System, West of Hatwai, West of Garrison and LaGrande paths. West of Hatwai is treated as an External Interconnection because its operating characteristics are similar to an External Interconnection and this Flowgate has historically been treated as such.

[3] Southern Intertie (AC Intertie and DC Intertie) and Montana Intertie.

[4] Development of the initial ATC Methodology included a series of open customer meetings held in 2003. Revisions to the methodology are developed in accordance with BPA Transmission Services' business practice process, involving customer meetings and review and comment period.

[5] Northern Intertie, AC Intertie, DC Intertie, West of Garrison, Reno-Alturas Transmission System, West of Hatwai, LaGrande, and Montana Intertie

4 ATC Methodology for Network Flowgates

4.1 A combination of planning power flow studies and contract accounting is used to determine the impact of current uses on each Network Flowgate.

4.2 The following is a step-by-step explanation of how the Combined Planning/Accounting Methodology is used to calculate the baseline ATC for each Network Flowgate:

4.2.1 Total Transfer Capability for Each Network Flowgate

The Total Transfer Capability (TTC) for each Network Flowgate represents the transfer capability of the BPA-owned transmission lines and associated facilities comprising such Network Flowgate. The description of BPA Transmission Services' determination of TTC, which includes adjustments for TRM, is posted on the ATC Methodology page of the BPA Transmission Services' web site.

4.2.2 Compute the Contract Accounting ATC

Contract Accounting ATC = TTC – Contract Accounting Flow

The Contract Accounting Methodology evaluates existing long-term firm transmission contracts, including grandfathered contracts (Formula Power Transmission (FPT), Integration of Resources (IR), and other pre-order 888 agreements); Network Integration (NT); and Point-to-Point (PTP) Transmission Service Agreements, and maps their long-term contract obligations to each of the Network Flowgates using PUF values. BPA Transmission Services' Contract Accounting Methodology and PUFs are posted on the ATC Methodology page of BPA Transmission Services' web site.

4.2.3 Compute the Planning ATC

Planning ATC = TTC – Planning Power Flow

Planning power flows for January, May, June, and August are computed using base case assumptions. BPA Transmission Services' Power Flow Base Case methodology and assumptions are posted on the ATC Methodology page of BPA Transmission Services' web site.

4.2.4 Compute the Delta between the Contract Accounting ATC and the Planning ATC for each month

Delta = Planning ATC – Contract Accounting ATC

The Contract Accounting ATC for January, May, June, and August is subtracted from the Planning ATC for the same months to compute the delta for those months, which may have a positive or negative value. The delta for each of those months is used as the delta value for the other months in the corresponding season.[6]

[6] January delta applies to November – February; May delta applies to April –May; June delta applies to June only; August delta applies to July – August. March delta is the average of the January and May deltas. October delta is the average of the August and January deltas. September delta is the

4.2.5 Determine the Combined Planning/Accounting ATC

Combined Planning/Accounting ATC = Contract Accounting ATC + Delta

4.2.6 Determine ATC Methodology Margin

ATC Methodology Margin (AMM) is the margin inserted into the Final ATC calculation to account for uncertainties. BPA Transmission Services' determination of AMM for each Network Flowgate is posted on the ATC Methodology page of BPA Transmission Services' web site.

4.2.7 Calculate Final ATC

Final ATC = Combined Planning/Accounting ATC - AMM

ATC availability is posted on the Transmission Services OASIS.

5 Consistency with NERC/WECC ATC Methodologies

5.1 The Combined Planning/Accounting ATC Methodology is consistent with the NERC and WECC standard for computing ATC. The standard NERC/WECC method for computing ATC is given by the equation:

ATC = TTC – Committed Uses

Where Committed Uses = existing transmission commitments + TRM

5.2 The steps described in Section 4 above can be restated in the following equation:

Final ATC = TTC – TRM - Contract Accounting Flow + Delta – AMM

5.3 The existing transmission commitments component of the NERC/WECC formula is calculated using the Contract Accounting Flows, the Delta between the Contract Accounting ATC and the Planning ATC.

6 Management of ATC Between Planning Baseline Studies

6.1 BPA Transmission Services will perform planning power flow studies to update long-term final ATC baseline amounts for the Network Flowgates at least once per year.

6.2 In the interim, requests for new transmission will be evaluated by determining the impact the new request has on each Network Flowgate using the ATC Impacts of Long-Term Firm Requests ATC Methodology document, posted on the ATC Methodology page of BPA Transmission Services' web site.

6.3 A request shall be granted if, at each Flowgate, there is either:

6.3.1 sufficient ATC based on the latest baseline final ATC calculations as adjusted for higher queued requests, or

6.3.2 the request qualifies as having a *de minimis* impact on that Flowgate

6.3.3 Where there is insufficient ATC, System Impact or other Studies, as specified by the Tariff, would be required.

---

weighted average of the August and January deltas, where the weighting is as follows: (0.75 x August delta); and (0.25 x January delta).

6.4 When a new request is granted, the baseline final ATC for each Flowgate (except those with *de minimis* impact) will be decremented by the new transaction's use of the Flowgate as determined by the ATC Impacts of Long-Term Firm Requests ATC Methodology document.

6.5 When the next long-term ATC baseline amounts are calculated, any new long-term firm arrangements, including those with *de minimis* impacts, will be included in the planning power flow studies and contract accounting analysis, and incorporated into the final ATC results for each Flowgate.

7 Modifications to ATC Methodology

7.1 When modifying the ATC Methodology, BPA Transmission Services will provide a notice and comment period for changes to the following items (items not expressly identified, will not be subject to such notice and comment):

7.1.1 The arithmetic formulas described in Sections 4.2.1 through 4.2.7 above used to calculate ATC using the Combined Planning/Accounting Methodology described in this ATC Methodology

7.1.2 The methodology for determining load forecasts as described in the Power Flow Base Case

7.1.3 The generation dispatch levels of federal hydro projects for NT load service described in the Contract Accounting Methodology and Power Flow Base Case

7.1.4 The netting assumptions described in the Contract Accounting Methodology

7.1.5 The ATC Methodology documents described above are posted on BPA Transmission Services' ATC Methodology web page.

8 Related Business Practices

8.1 Business Practices are available on BPA Transmission Services' web site at http://www.transmission.bpa.gov/Business/Business_Practices/.

8.2 ATC Supporting Information and Related Information/Documents are available on BPA Transmission Services' web page at http://www.transmission.bpa.gov/Business/Customer_Forums_and_Feedback/ATC_Methodology/

9 Version History

Version Date	Status/Summary
2/15/06, V3	Corrected typos in steps 2.6 and 7.1.1. Modified the Delta formulas for September and October in step 4.2.4. With the exception of the West of McNary and Monroe-Echo Lake flowgates, this modification does not change the amounts of Long-Term Firm (LTF) ATC currently available. The change results in 52 MW of additional LTF ATC on the West of McNary flowgate, and 6 MW of additional LTF ATC on the Monroe-Echo Lake flowgate north to south.
10/20/06, V2	Modified Section 6 to refer to the ATC Impacts of Long-Term Firm Requests ATC Methodology document Changed the name TBL to BPA Transmission Services in compliance with BPA's new reorganization Initiated a new version strategy to better track revisions
06/07/05	Removed Appendices from the primary ATC Methodology document and reformatted per current TBL business practice standards. Appendix 1, TBL Network Flowgate Map and Descriptions posted on the TBL web site at Tools, Assumptions, and Input Data web page. Appendix 2, Contract Accounting Methodology posted on the TBL web site at Tools, Assumptions, and Input Data web page. Appendix 3, Determination of TTC for Network Flowgates is posted on the TBL web site at Tools, Assumptions, and Data Input web page. Appendix 4, AMM and d*e minimis* Impact Dead-Band is posted on the TBL web site at Tools, Assumptions, and Data Input web page. Appendix 5 – Path Utilization Factors is posted on the TBL web site at Tools, Assumptions, and Data Input web page. Appendix 6, Power Flow Base Case s posted on the TBL web site at Tools, Assumptions, and Data Input web page. Appendix 7, ATC results has been removed. Current ATC is posted on TBL's OASIS.
02/01/05	Appendix 4, Section 4.c Changes the rounding impact of fractional MW to zero in it ATC and *de minimis* calculations

11/02/04	This revision updates Appendix 4, Section 3 to modify the *de minimis* testing criteria for the evaluation of new transmission requests. Second test added to evaluation of *de minimis* impacts. Multiple POR/POD evaluation updated to reflect moratorium starting August 13, 2004.
3/15/04	This revision updates Appendix 4, Section 3 of the ATC Methodology to reflect updates to the *De minimis* impact dead-band *De minimis* definition modified to accommodate offers associated with pending transmission service. Clarification of *de minimis* application to multiple POR/POD requests and small generator projects of 4 MW or less. Adoption of commitment to tracking *de minimis* impacts at Network Flowgates and reporting results.
2/11/04	This revision updates several of the ATC Methodology appendices due to a new power flow base case study and revised ATC results Appendix 1 – Flowgate map updated; West of Slatt Flowgate added; North of Hanford and Cross Cascades North Flowgates updated to reflect new infrastructure. Appendix 3 – Edited to reflect updated information. Appendix 5 – PUFs for 2006 infrastructure added. Appendix 6 –New Power Flow Base Case and assumptions based on 2006 infrastructure. Appendix 7 –Illustrative ATC results updated for 2004 - 2022.
11/13/03	Posted version 1.